**Claims:**

1   1.   A  method  of  operating  a  wireless  communication
2   system to service high data rate forward link transmissions
3   for a mobile station, the method comprising:

4       determining an active set of base stations for servicing
5   the mobile station;

6       for each of the active set of base stations, downloading
7   a plurality of blocks of data from a central buffer, wherein
8   each  block  of  data  of  the  plurality  of  blocks  of  data
9   includes  a  respective  sequence  number,  and  wherein  a  first
10  block of data of the plurality of blocks of data includes an
11  initial sequence number;

12      transmitting blocks of data from a serving base station
13  of the active set of base stations to the mobile station;

14      receiving a sequence number from the mobile station for
15  each  block  of  data  successfully  received  by  the  mobile
16  station; and

17      when the sequence number of a block of data successfully
18  received by the mobile station exceeds the initial sequence
19  number by a threshold value, downloading a next plurality of
20  blocks of data from a central buffer to each base station of
21  the active set of base stations.

1   2.   The  method  of  claim  1,  wherein  the  central  buffer
2   is  serviced  by  a  base  station  controller,  and  wherein  the
3   base  station  controller  services  the  plurality  of  base
4   stations.

1    3.    The method of claim 2, wherein the central buffer
2  is  serviced  by  a  services  gateway  switching  node  that
3  services the plurality of base stations.

1    4.    The  method  of  claim  1,  wherein  only  one  base
2  station of the active set of base stations services forward
3  link  transmissions  to  the  mobile  station  at  any  particular
4  time.

1    5.    The method of 4, wherein:
2    the  mobile  station  reports  the  sequence  number  of  a
3  successfully  received  block  of  data  to  its  serving  base
4  station; and
5    determining that the sequence number of a block of data
6  successfully  received  by  the  mobile  station  exceeds  the
7  initial sequence number by a threshold value is determined by
8  the mobile station's serving base station.

1    6.    The  method  of  claim  1,  wherein  the  wireless
2  communication system supports the 1xEV-DO standard.

1    7.    The  method  of  claim  1,  wherein  the  wireless
2  communication system supports the High Speed Downlink Packet
3  Access standard.

1    8.    A method of managing the contents of a plurality of

2   data buffers in a wireless communication system to service

3   forward link data transmissions for a mobile station, the

4   method comprising:

5        receiving data in a central buffer of a network element

6   of the wireless communication system element, wherein the

7   network element manages a plurality of base stations of the

8   wireless communication system;

9        downloading a plurality of blocks of data from the

10  central buffer to each of a plurality of distributed buffers

11  resident in a respective plurality of base stations forming

12  an active set of base stations servicing the mobile station;

13       transmitting blocks of data from a serving base station

14  of the active set of base stations to the mobile station;

15       determining that distributed buffer refresh is required;

16  and

17       downloading a next plurality of blocks of data from the

18  central buffer to each of the plurality of distributed

19  buffers resident in the active set of base stations servicing

20  the mobile station.


1    9.    The method of claim 8, wherein:

2        the central buffer supports centralized link layer

3   buffering operations; and

4        the plurality of distributed buffers support distributed

5   link layer buffering operations.


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10. The method of claim 9, wherein the central buffer and the plurality of distributed buffers support the radio link protocol.

11. The method of claim 8, wherein only one base station of the active set of base stations services forward link transmissions to the mobile station at any particular time.

12. The method of claim 8, wherein the network element is a base station controller.

13. A method of managing the contents of a plurality of data buffers in a wireless communication system to service forward link data transmissions for a mobile station, the method comprising:

receiving data in a central buffer of a network element of the wireless communication system, wherein the network element services a plurality of base stations of the wireless communication system;

downloading a plurality of blocks of data from the central buffer to each of a plurality of distributed buffers resident in a respective plurality of base stations that define an active set of base stations servicing the mobile station, wherein each block of the plurality of blocks of data includes a respective sequence number, and wherein a

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15  first block of data of the plurality of blocks of data

16  includes an initial sequence number;

17     transmitting blocks of data from a serving base station

18  of the active set of base stations to the mobile station;

19     for each block of data successfully received by the

20  mobile station, receiving confirmation from the mobile

21  station that includes a sequence number of the successfully

22  received block of data; and

23     when the sequence number of a block of data successfully

24  received by the mobile station exceeds the initial sequence

25  number by a threshold value, downloading a next plurality of

26  blocks of data from a central buffer to each of the plurality

27  of distributed buffers resident in the plurality of base

28  stations that define the active set of base stations

29  servicing the mobile station base.

1     14.  The method of claim 13, wherein the central buffer

2  is serviced by a base station controller that services the

3  plurality of base stations.

1     15.  The method of claim 13, wherein the central buffer

2  is serviced by a services gateway switching node that

3  services the plurality of base stations.

1     16.  The method of claim 13, wherein only one base

2  station of the active set of base stations may be the serving

3  base station at any particular time.

1    17. The method of claim 13, wherein:

2    the mobile station reports the sequence number of a

3  successfully received block of data to the serving base

4  station; and

5    determining that the sequence number of a block of data

6  successfully received by the mobile station exceeds the

7  initial sequence number by a threshold value is determined by

8  the serving base station.


1    18. A base station controller comprising:

2    a packet data serving node interface;

3    at least one base station interface that interfaces the

4  base station controller to a plurality of base stations; and

5    at least one digital processor coupled to the Radio

6  Frequency unit that executes software instructions causing

7  the base station controller to:

8    determine an active set of base stations for servicing

9  the mobile station;

10    download a plurality of blocks of data to each base

11  station of the active set of base stations, wherein each

12  block of data of the plurality of blocks of data includes a

13  respective sequence number, and wherein a first block of data

14  of the plurality of blocks of data includes an initial

15  sequence number;

16      receive an indication from a serving base station of the

17  active set of base stations that a data refresh is required;

18  and

19      download a next plurality of blocks of data to each base

20  station of the active set of base stations.


1      19.  The base station controller of claim 18, wherein

2  only one base station of the active set of base stations

3  services forward link transmissions to the mobile station at

4  any particular time.


1      20.  The base station controller of claim 18, wherein

2  the base station controller supports the 1xEV-DO standard.